

**PATENT APPLICATION****IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of

Docket No: Q92477

Hiroki SASAKI, et al.

Appln. No.: 10/565,535

Group Art Unit: 1796

Confirmation No.: 9912

Examiner: Karuna P. Reddy

Filed: July 17, 2006

For: HEAVY-HYDROGENATED (METH) ACRYLATES, PROCESS FOR PRODUCING THEM, POLYMERS THEREOF AND OPTICAL MEMBERS

**DECLARATION UNDER 37 C.F.R. § 1.132**

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

I, Tsuneaki Maesawa, declare and state as follows:

I am a citizen of Japan.

I studied agricultural science at Shinshu University and received my MSc degree therefrom in 1992 under the guidance of Professor Ichiro Tomida; since 1992 I have worked as a research scientist for Wako Pure Chemical Industries, Ltd., in Japan; and I am a co-inventor of the above-captioned patent application.

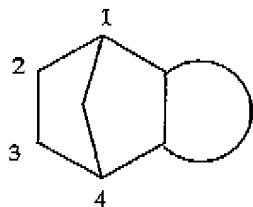
I am familiar with the Office Action dated May 29, 2008, in the above-captioned patent application, and am familiar with the references cited therein against present claim 1, that is, the Kawai et al, Koike and Takase et al references; also, I am familiar with CA Patent Publication CA 873873, submitted as an IDS in the above-captioned patent application.

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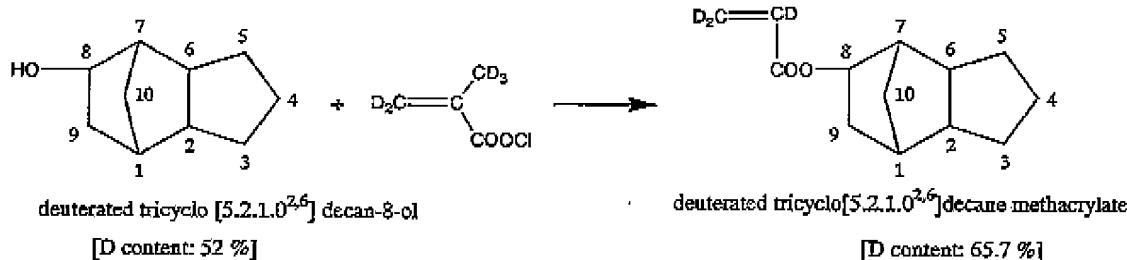
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In response to the Office Action dated May 29, 2008, claim 1 is to be amended to recite that the binding site of the norbornane ring of the R<sup>4</sup> substituent to the ester oxygen is at the 2- or 3- position of the norbornane ring, in accordance with the disclosure in Example 1 of the above-captioned patent application; and, in my opinion, the above-noted references of record do not teach or suggest a compound of formula [1] of claim 1 containing such a structure.

The 2- or 3- position of the (deuterated) norbornane ring is as follows, which corresponds to the 8- or 9- position of (deuterated) tricyclo[5.2.1.0<sup>2,6</sup>] deca-8-ol, which is esterified with (deuterated) (meth)acrylic acid for preparing (deuterated) tricyclo[5.2.1.0<sup>2,6</sup>] deca-8-yl (meth)acrylate as in the procedure of Example 1 of the above-captioned patent application:



## Example 1



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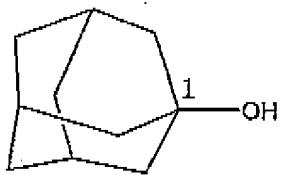
As the Examiner will appreciate, Kawai et al and Takase et al are silent with respect to deuteration of tricyclo[5.2.1.0<sup>2,6</sup>] deca-8-yl (meth)acrylate and any processes for making it. Furthermore, Koike merely mentions use of deuterated MMA, MMA-d8.

According to the synthetic example described in Kawai et al., the esterification of tricyclo[5.2.1.0<sup>2,6</sup>] deca-8-ol with (meth)acrylic acid was carried out for preparing tricyclo[5.2.1.0<sup>2,6</sup>] deca-8-yl (meth)acrylate. For preparing the compounds as set forth in the new claim 1 according to the synthetic examples described in Kawai et al, a deuterated condensed-aliphatic ring alcohol such as deuterated tricyclo[5.2.1.0<sup>2,6</sup>]decanol is required as a starting material. In my opinion, as I explain below, it was not known prior to the invention of the above-captioned patent application how to produce the condensed ring starting materials required for preparing the compounds claimed in amended claim 1 in which the binding site is at the 2- or 3- position of the norbornane ring.

Among the documents published prior to the present invention, as far as I know, only Canadian Patent Publication No. 873873, referred to as "Canadian 873", which was submitted to the USPTO as an IDS, teaches a method for preparing a deuterated condensed-aliphatic-ring alcohol, adamantanol-d15. According to the method described in Canadian 873, adamantanol-d15 was prepared as follows. Adamantane-d16 (i.e. deuterated adamantane) was prepared from tricyclo[5.2.1.0<sup>2,6</sup>]decane-d16 (please see p. 6, lines 11-18), subjected to bromination on the 1-position carbon atom (please see p. 11, lines 2-22), and then subjected to hydroxylation to form adamantanol-d15 (please see p.12, lines 23- p.13, line 3). The structure of adamantanol-d15 is as follows:

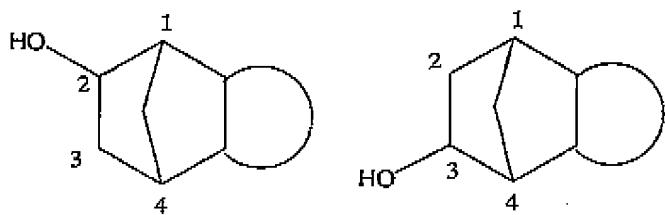
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and it can be seen that it is impossible to prepare the compounds of amended claim 1 by using adamantanol-d15 according to the method described in Kawai et al because the hydroxyl substituent is at the 1-position of the norbornane ring.

In the above mentioned method, bromination is carried out on the 1-position carbon atom (or in other words, on the tertiary carbon atom) of the adamantane ring dominantly, and is not carried out on the 2- or 3-position carbon atom (or in other words, on the secondary carbon atom). It has been well-known that tertiary hydrogens are much more reactive to bromination compared with secondary and primary hydrogens. Thus, naturally, bromination of tricyclo[5.2.1.0<sup>2,6</sup>]decane-d16 is also carried out on the 1-position carbon atom (or in other words, on the tertiary carbon atom) dominantly, and is not carried out on the 2- or 3-position carbon atom (or in other words, on the secondary carbon atom). Namely, according to the method described in Canadian 873, deuterated condensed-aliphatic-ring alcohols containing the norbornane ring having a hydroxy group at the 2- or 3-position, as shown below, cannot be prepared:



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On the other hand, in order to prepare compounds as set forth in the new claim 1 according to the method described in Kawai et al., deuterated condensed-aliphatic-ring alcohols containing the norbornane ring having a hydroxy group at the 2- or 3-position are required.

Therefore, I believe that even if Canadian 873 would have been combined with the documents cited by the Examiner, Kawai et al., Takase et al. and Koike, one skilled in the art could not have prepared the compounds as set forth in amended new claim 1. And furthermore, I believe that the compounds as set forth in amended claim 1 are distinguishable and unobvious from the compounds disclosed in the cited documents.

I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: September 25, 2008Tsuneaki Maesawa  
Tsuneaki Maesawa